Suburban Nostalgia: The Community Building Potential of Urban Screens

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ABSTRACT
Urbanely nomadic residents are increasingly forgoing the potential of locale based serendipitous encounters in favour of digitally mediated interactions within their walled garden of existing social networks. This limits a sense of community in urban neighbourhoods to members of one's social network, but what of interactions with those outside of these networks, such as inhabitants of residential spaces? We report on our pilot study of open ended interviews which investigates the different user archetypes whose needs we consider when designing social technology for urban spaces. We propose a design to extend the sense of community in urban neighbourhoods beyond pure network sociality. Through a lens of 'suburban nostalgia' we envision how neighbourhood interactions might be retrofitted in new ways through civic engagement in the enhancement of environments.

Keywords
Urban informatics, urban screens, shared displays, urban residential environments, suburban nostalgia.

1. INTRODUCTION
The mass adoption of mobile phones and Internet based social networking technologies, has not, as critics feared, brought about 'the death of the city'. Yet within HCI, the focus on meeting the needs of the digitally connected, but geographically dispersed user has eclipsed the design of technologies that might bring about the collective enhancement of residential environments. Exceptions to this are the work by [1] [3] [8] [9]. This is the gap this research aims to meet.

The mobile phone is integral to the formation of fluid social interactions and has accelerated urban mobility [10]. However, while the mobile phone has increased the intimacy of pre-existing social networks, there is an erosion of the sense of community in the conventional (or traditional) understanding. The social nature of mobile facilitated interactions sees users favouring the artefact as a private mode of communication that in turn becomes a barrier between them and those nearby but outside their social network. Can social technology bring intimacy back into urban neighbourhoods and help overcome what Struppek [6] refers to as "the struggle against a feeling of 'place-lessness'".

The lack of viable systems designed to facilitate and support social networking in inner-city residential developments presents an immediate opportunity to create innovative solutions to bridge this gap. [5] We aim to address this issue by designing technologies that can reinvigorate notions of a new sense of community as part of our project, *Swarms in Urban Villages: New Media Design to Augment Social Networks of Residents in Inner City Developments*. This three year research project is conducted to advance knowledge of how residents in urban environments can be assisted in their social communication and interaction through the use of new media that bridge the physical and digital city. One of the desired outcomes of the project is the design of new technologies that enable co-located residents to easily transition between social/network and place-based/collective modes of interaction.

2. METHODOLOGY
This paper reports on the initial phase of the research, a pilot study of ten participants, using an open ended interview technique and grounded analysis of the data. It was conducted to provide a rapid but informed understanding of the different user archetypes we will be encountering throughout the project. Specific user needs and potential design implications emerged which helps us to understand the complexities of different types of residential users whose needs will be addressed through our design of technologies for urban spaces.

Stretching the notion of the city resident to incorporate the suburban fringe dweller, the user study will incorporate perspectives from a range of residents living in a variety of city dwellings. This means that in addition to the dominant model of the urban resident who lives in a high density apartment in the CBD, we will include the inner city/suburban fringe dweller, who, unlike their CBD counterpart, comes complete with garden, nature strip and garage. Incorporating a range of inner and outer urban residential settings and lifestyles, will provide a useful framework for highlighting unique design challenges and possibilities. Can a new sense of 'neighbourhood', different from a romantic notion of suburban life be retrofitted aspired to in new and original ways that are compatible with contemporary city lifestyles? What are new ways that neighbourhood 'nostalgia' might be reinterpreted for a new generation? We note that

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although suburban nostalgia will mean something different for everyone, it is nevertheless a shared signifier for the notion of neighbourhood interactions.

This study is not about 'neighbours' per se. There is plenty of evidence that people prefer to interact (both online and offline) with others who are nearby rather than with those who are distant [2]. Email, facebook, text messaging are used to interact online, but proximity enables users to gather and interact face-to-face. Our use of the term 'suburban nostalgia' does not refer to an idealised past that resembles Tönnies' *Gemeinschaft* [12]. It refers to places such as the Greenwich Village of the 1950s and 60s that Jane Jacobs wrote about in *The death and life of great American cities* [7]. We do not aspire to create homogeneous communities based on co-location as the communal glue. We want to design social technology that allows users to create new bonds that relate to civic engagement in the enhancement of their environments.

In terms of the interview questions, as well as basic demographics information including age, education, occupation, type of dwelling (apartment, house, etc.), other occupants, rent or owned dwelling, etc., specific references were made to the following issues: General opinions in regards to the integration (and opportunities to integrate) technology in shared residential spaces with a specific focus on mobile phones and urban screens. What type of content would users want and make them most likely to interact with each other? Opinions with regards to using a mobile device to post, share or capture information from a public display. Where should a display be positioned?

3. EMERGING THEMES

The pilot study revealed a series of emerging themes, user needs and potential design implications.

3.1 Anonymity and Privacy

Users expressed the importance of privacy and even anonymity in residential spaces. User Need: There is a need for technologies that allow residents to blend in or go unnoticed by other people and even by the technology itself. This was noted by Leroy[1]:

"When I paid for this flat, I paid for a level of anonymity. I don't want my face on a picture board next to the lift – I'm like Jerry in that Seinfeld episode when he tries to avoid other people in his building knowing who he is."

It was also supported by Mikey who wanted residential spaces that did not encourage community interactions:

"There are some people that want to be involved in things going on in the community. Or at least want to know about it. I'm not that guy."

While another participant Vera, drew attention to the need for privacy in the form of personal data that is not presented as stand alone information, but hidden through its integration into mass representations.

Design Implication: A mechanism to protect certain users from shared residential spaces that support technologies that do not allow them to blend into or even disappear into their everyday surroundings. A *Minority Report* style situation, where users are followed by a digitized account of their personalized product preferences would not be desirable for this user group.

3.2 Representation of Self and Others

Five of the ten participants had strong and often conflicting ideas about how their own and other peoples' information should be represented on a shared display. User Need: Two users wanted to avoid digital representations that enforced the feeling of being surrounded by other people (see also anonymity and privacy). For example, in response to a question concerning the potential use of display that provides feedback about the water consumption on each floor of his building, Leroy stated:

"It's bad enough that I have to live with people next to me, above and below me, without having some sort of digital display in the lobby to remind me. I am repulsed by that thought."

This was in keeping with Vera, who, as mentioned in the previous section, wanted to avoid the representation of her personal data as stand alone information, in favour of it being hidden through its integration into mass representations.

Design Implications: Interfaces that provide information such a water usage in an ambient manner.

User Need: In contrast to the previous users, three of the participants in the study wanted representation of experiences that were personally relevant to their day to day lives.

Design Implication: For these users the *Minority Report* vision is a technological challenge that needs to be met.

3.3 Space/Position/Styling of Urban Screens

Participants described how they thought urban screen should be incorporated into their environment.

User Need: Escapist displays were desirable. For example Sean, while willing to embrace urban screens, wanted to avoid displays that are distracting. "No gaudy flashing lights." Even Leroy, the most resistant of the participants stated "If it can't just shut down when I walk past, at least let it show mountains or something that has nothing to do with the city."

Design Implication: Subtle or escapist displays can appeal to those who don't want them in the first place and avoid alienating those that do. Aim for ambient, organic rather than high tech interfaces.

User Need: Short attention spans require displays be positioned somewhere that a person lingers. This was supported by Eva who noted "Screens could be positioned within the (residential) complex or anywhere people have actual time to read it – the bus stop or the local shopping centre." Steve agreed: "It's important that the screen is positioned where I have time to look at it. I wouldn't wait for specific content. But if it is somewhere I would be waiting anyway, I would be more inclined to engage." Furthermore, five of the participants pointed out that if positioned in the right spot, urban screens could help to encourage co-located people to interact simply by keeping them in the same place long enough to communicate. (see also co-located interactions)

Design Implication: The spatial positioning of a display must be chosen carefully to enhance users' chances of interacting with it and with each other.

[1] All names have been changed to protect privacy.

User Need: From a stylistic perspective the need for displays that had an aesthetically pleasing quality was noted by Lars. "The botanical gardens and war memorials – they are beautifully and emotive and they represent something."

Design Implication: Pay attention to the power of aesthetics to enhance willingness to engage with a display.

3.4 Digital Content

Participants wanted localised, mashed up, or personalised content that was relevant to them.

User Need: The use of global advertising content is not as likely to be consumed by residents as local issue based content, or personalized information about local services. "I would like to be able to use them (urban screens) to share information within the community. What local painters are recommended (or not recommended)? What paint colour is that house?" (Sean). For Steve, information overload was a problem – daily newspapers – emails at work, and a more personalized content display would be welcomed.

Design Implication: Less global-centric advertising content, more local information. Streamlined, personal information is ideal but what is the trade off between personalisation and privacy?

User Need: Mix of content. "We have those public screens on the city cats in Brisbane, if it's just commercial then I don't pay much attention. If there is a news ticker headline I will read it, if there are games or puzzles to solve I will do that. Eg who wants to be a millionaire questions." (Steve)

Design Implication: Mash up of content, or perhaps split screen presentations. Provide something for everyone.

3.5 Facilitating Co-located Interactions via Context Specific Interfaces

Participants thought context specific technologies would enhance local community building.

User Need: Technology can help in the creation of networks in co-located communities around shared interests such as sport or pet ownership. This was in keeping with the findings from the Urban Tribe Incubator. [5] Eva noted "If technology could help in pinpointing neighbours with similar interests, say to go for a regular run together, that would be great as it would decrease the dependence on friends in other suburbs for those kinds of activities." Furthermore, Mikey noted that shared displays can help to encourage co-located people to interact simply by positioning them in the same place long enough to communicate. "Positioning of screens in places near lifts or somewhere where someone else is likely to be looking at them could help strike up a conversation about it." (See also Urban screens – space/postion/style) This was supported by Eva who stated that the right content could facilitate co-located interactions that might not have otherwise occurred:

"If the content would be more interesting and about local issues, it could potentially spawn a conversation between the 'watchers'."

Design Implication: Interactions involving common interests can be 'social glue' facilitating co-located interactions that might not have otherwise occurred.

User Need: Helen, a participant living in a traditional 'leafy suburb', provided feedback that shed light on the importance of a 'context' and a 'space' for co-located interactions with neighbours to occur. When asked how she seemed to know all the people in her street she responded:

"They all come by (the people in her street) and ask me about my lemon tree and my orange tree and I how I grow it so good. How else would I know everybody?" (Helen)

From Helen we get a sense of the 'chat over the fence' type of interaction that are often absent in urban residential spaces. Could gardening be one of those contexts that reinvigorates a sense of 'neighbourhood'. Is sustainability or going green the 'new gardening'?

Indicates a potential to retrofit inner city communities through the use of context specific displays that draw on a sense of 'suburban nostalgia'.

3.6 Sustainability Feedback Loops

Users would welcome and if possible, contribute via their mobile phones, information displayed on public screens if it was in regards to sustainable living.

User Need: Energy saving, or other sustainability feedback loops about our efforts to love a greener life are desirable. For example, Mikey noted that "Most people would be interested in green stuff. I would even contribute information if I could." While Vera desired more information in this area to make behavioural changes as currently she had no mechanisms in place to understand her consumption patterns. "I need more transparency with regards to complex water and electricity consumption."

Design Implication: Displays that present positive reinforcements of community attempts to become greener, and are accessible enough to allow users to contribute content or data they night have are needed. The quest to become green becomes the collective interest-based cause for motivation to socially interact!

User Need: Green feedback loop data that is presented as carrots not sticks. Lars pointed out the need to "Share and display data in a way that is going to make you feel good and that you can do even better." (Lars). He also made a point abut the aesthetics of the data representation in that beauty and aesthetics should frame any mention of sustainability because that is what draws people. "The Shrine is an example in Melbourne of something that is beautiful and artistic and gives us a sense of where we came from. The flame of the Unknown Soldier is another example – something which draws different feelings for everyone but reminds us not to go back to that time in history. It's great to have a beautiful thing that represents something so terrible. This could be easily translated to encompass sustainability causes."

Design Implication: Information that helps our attempts to live more sustainable lives should be presented in a positive way. Environmental feedback loop should be functional in purpose while augmented with an artistic orientation. This is in keeping with the debate about the nature of representing information about one's self and others earlier on.

3.7 Civic Engagement

Participants want technology that can give them more of a voice and become more active in the community.

User Need: Technology should assist in the process of democratising residential spaces. Benji noted:

"You should not have to go into council – you have to go out of your way to find out what is happening. Only people that have vested interest and turn up to council meetings become involved and end up getting their way."

Furthermore, civically aware 'urban citizens' are willing to put time in time and effort into the community but if it is too time consuming they become reluctant. Vera noted that this is where technology could help:

"Residents putting up pre-written letters at the bus stops which residents should sign and send to the council to support the change of traffic light settings, this is a great indication that some residents are already civically aware 'urban citizens' willing to put time and effort into it., but it's so time consuming".

A question to consider is will users be savvy enough to get the hang of new technologies that support these types of interactions? Will they have access? Mikey noted, "New social technologies and mobile content sharing require latest models and pretty skilled people to deploy them."

Design Implication: Introduce new technologies in residential spaces that support the actions of different residents and activities happening in the community. Avoid the introduction of technologies that alienate particular groups of people and which might create a new digital divide.

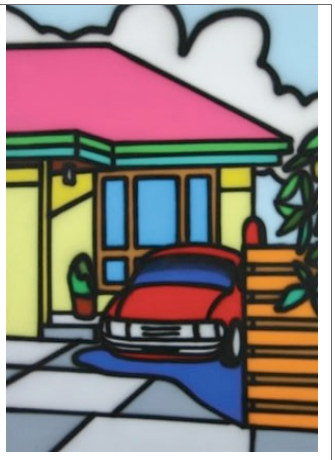
4. CONCLUSION

From our pilot study it is already becoming evident that the integration of shared displays in residential spaces provokes a diverse series of opinions from residents. Reactions become more pronounced when the displays depict data that was a simulation or reproduction of the specific residential experience as opposed to generic content such as a sporting match. A series of 'resident archetypes' emerged from the pilot study that presented highly complex and often contradictory user needs. They are: undercover; Minority Report; aesthetic; green / activist; suburban nostalgic.

Although this project is just beginning and further research is about to commence, a set of design challenges is already hinting that technologies integrated in residential spaces must address the following user needs. The first is the users' desire for reproduction and representation versus the users who crave anonymity. The second is the need for the form factor of the technology to be visible and interactive without becoming an invasive presence. The third is for displays that are aesthetically pleasing. The fourth is for sustainability feedback loops and technologies that facilitate 'community activism'. The fifth design challenge is to pay homage to suburban nostalgia but in new and innovative ways.

In order to address these challenges we propose an urban screen that appears to have a primarily aesthetic presence such as nature-scapes, or artwork that provides relatively ambient, comfortable, escapist imagery. At the same time there is the potential to embed this display with rich data feedback that has meaning to those who wish to engage with it. Embedded real world information in ambient displays can take many forms. For example, prior work has developed digital trees growing or receding represented stock market fluctuations. The 'money tree' used tree length to represent trade volume and tree leaves to represent stock price [4]. We propose that the data takes the form of sustainability feedback loops that represent the changing state of the local environment. Those interested in the air quality look at the sky. Those interested in temperature look at the sun, those interested in UV levels look at the clouds. Finally, to enhance the feeling of suburban nostalgia, the stylistic quality of the display will borrow from Arkley's painting of suburban Australia.

Howard Arkley's paintings of suburbia are signifiers that remind us of what it means to have a sense of neighbourhood. How can we capture this to create, not a hobbit like village, but a more environmentally sustainable community?



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